



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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07/923,692 07/31/92 DONGSON

1100-20171

12M2/1309

EXAMINER

ALBERT P. FALLUIN
LIMBACH & LIMBACH
2001 FERRY BUILDING
SAN FRANCISCO, CA 94111

ART UNIT	PAPER NUMBER
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1804

DATE MAILED: 12/09/93

12/09/93

NOTICE OF ALLOWABILITY

PART I.

1. ☒ This communication is responsive to Prelim. Amend. filed 23 Nov 93, 30 Nov 93, 1 Dec 93, & Commun. of 3 Dec 93
2. ☒ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
3. ☒ The allowed claims are 43-53, 55-64, and 66-82
4. ☐ The drawings filed on _____ are acceptable.
5. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has [] been received. [] not been received. [] been filed in parent application Serial No. _____, filed on _____.
6. ☒ Note the attached Examiner's Amendment.
7. ☒ Note the attached Examiner Interview Summary Record, PTOL-413.
8. ☒ Note the attached Examiner's Statement of Reasons for Allowance.
9. ☒ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
10. ☒ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II.

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

1. ☒ Note the attached ~~EXAMINER'S AMENDMENT~~ or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
2. ☒ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
 - a. ☒ Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto, or to Paper No. _____. CORRECTION IS REQUIRED.
 - b. ☐ The proposed drawing correction filed on _____ has been approved by the examiner. CORRECTION IS REQUIRED.
 - c. ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
 - d. ☒ Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

Attachments:

- ☒ Examiner's Amendment
- ☒ Examiner Interview Summary Record, PTOL-413 Pages No 21, 22, 26
- ☒ Reasons for Allowance
- ☒ Notice of References Cited, PTO-892 2 of 2
- ☒ Information Disclosure Citation, PTO-1449 5 of 5
- ☒ Notice of Informal Application, PTO-152
- ☒ Notice re Patent Drawings, PTO-948
 - Listing of Bonded Draftsmen
 - Other

P. Moody

5 An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

In the Title:

10 Please delete "Recombinant Plant Viral Nucleic Acids" and insert therefore --Plant viral vectors having heterologous subgenomic promoters for systemic expression of foreign genes--.

Please amend the claims as follows.

15 Claim ~~43~~³⁷ (amended) A [biologically functional plasmid or viral] DNA vector designated as [having the characteristics of] pTB2 [(ATCC No.) having American Type Culture Collection accession number 75280 [] and mutants thereof] .

A D
20 Claim ~~44~~³⁸ (amended) A [biologically functional plasmid or viral] DNA vector designated as [having the characteristics of] pTBUS having American Type Culture Collection accession number 75281 [and mutants thereof] .

H 25
In claim 45, lines 17-18, please delete "the first and second viral subgenomic promoters possess different nucleic acid sequences" and insert therefore --the first viral subgenomic promoter is heterologous to the second viral subgenomic promoter--.

In claim 52, line 2, after "third", please insert --viral--.

In claim 52, lines 3-5, please delete "the third subgenomic promoter possesses a different nucleic acid sequence than the first and second subgenomic promoter" and insert therefore --the third viral subgenomic promoter is heterologous to each of the first and second viral subgenomic promoters--.

In claim 53, lines 2-3, please delete "the recombinant plant viral nucleic acid" and insert therefore --the plus sense, single stranded RNA plant virus--.

Please cancel claim 65.

10 In claim 67, lines 20-21, please delete "the first and second viral subgenomic promoters possess different nucleic acid sequences" and insert therefore --the first viral subgenomic promoter is heterologous to the second viral subgenomic promoter--.

15 In claim 71, line 2, please delete "forming" and insert therefore --the step of systemically expressing a protein that regulates production of--.

In claim 79, line 1, please delete "recombinant plant viral nucleic acid" and insert therefore --process--.

20 In claim 79, lines 2-3, please delete "the recombinant plant viral nucleic acid" and insert therefore --the plus sense, single stranded RNA plant virus--.

In claim 80, line 1, please delete "recombinant plant viral nucleic acid" and insert therefore --process--.

In claim 80, line 1 please delete "78" and insert therefore
--79--.

In claim 80, line 2, please delete "the recombinant plant
viral nucleic acid" and insert therefore --the plus sense,
single stranded RNA plant virus--.

Authorization for this Examiner's Amendment was given in a
telephone interview with Albert Halluin on 3 December 1993.

Any inquiry concerning this communication should be directed
to P. Moody (nee Rhodes) at telephone number (703) 308-0196.

P. Moody
P. Moody
Patent Examiner
Group Art Unit 1804

PLM
P. Moody
December 3, 1993

The following is an Examiner's Statement of Reasons for Allowance:

5 The telephonic restriction requirement made 19 November 1993
has been withdrawn because vectors of claims 43 and 44 contain
two different viral subgenomic promoters one of which is joined
to a viral coat protein gene and the other of which is joined to
a restriction site "X". The cloning site "X" can be viewed as a
second nucleic acid sequence or as a site for insertion of a
10 second nucleic acid sequence (see Figure 1, insertion of NPTII at
"X", for example). Accordingly, the cloning vectors of claims 43
and 44 are viewed as being the invention of claim 45 or as having
a combination-subcombination relationship with the invention of
claim 45. In either case, the inventions are not patentably
15 distinct such that all claims are considered drawn to the same
invention.

The amendment filed 4 October 1993 (Paper No. 19) does not
introduce new matter into the specification as persuasively urged
in the Second Supplemental Preliminary Amendment filed 1 December
20 1993. The Examiner agrees that the sequence was disclosed in the
specification as filed by virtue of SEQ ID NO:9 and page 64 of
the specification which said that both foreign genes were ligated
to the same transit peptide. There is clear typographic error in
the transit peptide portion of SEQ ID NO:7 and correction of same
25 can be made by reference back to SEQ ID NO:9 without introducing
new matter.

5 The information disclosure statement filed 28 December 1992 has been entered; however, entries for references EI-EP which list 15 books by title and volume were lined through by the Examiner and were not considered. The relevance of EI-EP was not stated; there was no indication that these references were cumulative and, if so, cumulative of what so that copies of same would not be needed to understand the relevance.

10 Grill and Dawson Declarations (Paper No. 24) and remarks found in (Papers No. 23 and 25) have all been considered. The documents attached as exhibits to the Declarations were also considered and are made of record on the attached PTO-892 form.

15 The invention as claimed is found in parent application 07/739143 filed 1 August 1991. The prior art described numerous plant viral vectors in which foreign genes were inserted either in place of a viral coat protein gene or fused to a coat protein gene and transcribed under the control of one viral subgenomic promoter (see e.g, Takamatsu et al, reference AI; Gallie et al, reference S; Ahlquist et al, reference L; French et al, reference AJ).

20 Those viral vectors which had been constructed with two viral subgenomic promoters utilized homologous promoters rather than heterologous promoters as in the present invention (see e.g. Dawson et al, reference AH; French et al, reference CS). Such prior art vectors were found to suffer from frequent deletion of
25 the inserted foreign gene and reversion to wild type so that

systemic expression of the foreign gene was not, and indeed, could not be achieved. These vectors had been constructed to analyze position effects with respect to placement of the second subgenomic promoter such that the teachings in these references failed to appreciate that heterologous subgenomic promoters would lead to stable systemic expression. On the contrary, the prior art taught away from the invention in that deletion events were seen as an advantage (Dawson et al, last column).

Accordingly, the present invention as claimed is deemed to be free of the cited prior art. One of ordinary skill in the art would not have expected heterologous subgenomic promoters to result in systemic expression with a reasonable expectation of success and, moreover, would not have been motivated to use heterologous subgenomic promoters in light of a clear teaching of advantage in using homologous promoters.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication should be directed to P. Moody (nee Rhodes) at telephone number (703) 308-0196.

P. Moody

P. Moody
Patent Examiner
Group Art Unit 1804

PRM
P. Moody
December 4, 1993



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

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18M2/1209

ALBERT P. HALLUIN
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2001 FERRY BUILDING
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**NOTICE OF ALLOWANCE
AND ISSUE FEE DUE**

☐ Note attached communication from the Examiner

☐ This notice is issued in view of applicant's communication filed _____

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
07/923,692	07/31/92	038	MOODY, P 1804	12/09/93
First Named Applicant DONSON, JON				

TITLE OF INVENTION
PLANT VIRAL VECTORS HAVING HETEROLOGOUS SUBGENOMIC PROMOTERS FOR SYSTEMIC EXPRESSION OF FOREIGN GENES (AS AMENDED)

	ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
1	BIOG-20121	435-172.300	120	UTILITY	YES	\$585.00	03/09/94

THE FEE DUE IS THE AMOUNT IN EFFECT AT THIS TIME. IF THE AMOUNT OF THE ISSUE FEE INCREASES PRIOR TO PAYMENT, APPLICANT WILL BE NOTIFIED OF THE BALANCE OF ISSUE FEE DUE.

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.

PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY Status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the patent and Trademark Office of the change in status, or
- B. If the Status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, pay of 1/2 the FEE DUE shown above.

II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, Part C of this notice should also be completed and returned.

III. All communications regarding this application must give series code (or filing date) and serial number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to contrary.

IMPORTANT REMINDER: Patents Issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

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Washington, D.C. 20231

Attach to
Paper
No. 29

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY DOCKET NO./TITLE
07-923692	31 July 92	Denson et al	B106-20121

DATE MAILED:

NOTICE OF INFORMAL APPLICATION

(Attachment to Office Action)

This application does not conform with the rules governing applications for the reason(s) checked below. The period within which to correct these requirements and avoid abandonment is set in the accompanying Office action.

A. A new oath or declaration, identifying this application by the application number and filing date is required. The oath or declaration does not comply with 37 CFR 1.63 in that it:

1. ☐ does not identify the city and state or foreign country of residence of each inventor.
2. ☐ does not identify the citizenship of each inventor.
3. ☐ does not state whether the inventor is a sole or joint inventor.
4. ☐ does not state that the person making the oath or declaration:
 - a. ☐ has reviewed and understands the contents of the specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration.
 - b. ☐ believes the named inventor or inventors to be the original and first inventor or inventors of the subject matter which is claimed and for which a patent is sought.
 - c. ☐ acknowledges the duty to disclose information which is material to the examination of the application in accordance with 37 CFR 1.56(a).
5. ☐ does not identify the foreign application for patent or inventor's certificate on which priority is claimed pursuant to 37 CFR 1.55, and any foreign application having a filing date before that of the application on which priority is claimed, by specifying the application serial number, country, day, month, and year of its filing.
6. ☒ does not state that the person making the oath or declaration acknowledges the duty to disclose material information as defined in 37 CFR 1.56(a) which occurred between the filing date of the prior application and filing date of the continuation-in-part application which discloses and claims subject matter in addition to that disclosed in the prior application (37 CFR 1.63(d)).
7. ☐ does not include the date of execution.
8. ☐ does not use permanent ink, or its equivalent in quality, as required under 37 CFR 1.52(a).
9. ☐ contains non-initialed alterations (See 37 CFR 1.52(c)).

10. ☒ Other: *does not list all parent cases for which priority under 35 USC 120 was sought.*

B. Applicant is required to provide:

1. ☐ A statement signed by applicant giving his or her complete name. A full name must include at least one given name without abbreviation as required by 37 CFR 1.41(a).
2. ☐ Proof of authority of the legal representative under 37 CFR 1.44.
3. ☐ An abstract in compliance with 37 CFR 1.72(b).
4. ☐ A statement signed by applicant giving his or her complete post office address (37 CFR 1.33(a)).
5. ☐ A copy of the specification written, typed, or printed in permanent ink, or its equivalent in quality as required by 37 CFR 1.52(a).
6. ☐ Other: